Optimizing Adherence Monitoring to Support Differentiated Care, Better Efficiency, and Improved Outcomes

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Outline

• Common adherence monitoring approaches in routine clinical care
• Additional available adherence monitoring options from research
• Currently utilized adherence interventions in routine clinical care
• Role for differentiated care
• Opportunity for efficiency and improved outcomes through adherence monitoring
• Taking a holistic approach
Adherence monitoring in routine clinical care

- Clinician assessment
- Self-report
- Pill counts (common for ART)
- Pharmacy pick up (typically independent of clinicians)
- Directly observed therapy (common for TB)
Additional adherence monitoring options from research

- Electronic monitors (e.g., MEMS, Wisepill)
- Digital pills (e.g., Proteus)
- Cellular connections (e.g., Wel-Tel)
Additional adherence monitoring options from research

• Pharmacologic measures
  • Hair
  • Red blood cells/dried blood spots
  • Peripheral blood mononuclear cells
  • Plasma
  • Urine
Adherence interventions in routine clinical care

- Individual
  - Education
  - “Counseling”
  - Counseling
    - Motivational interviewing
    - Cognitive behavioral therapy

- Implemented with varying degrees of quality
Regimen simplification

• Fixed dose combinations

“We combined all your medications into ONE convenient dose.”

• Convenient pill packaging
Structural interventions

- Task-shifting
- Peer support/mentoring
- Community distribution of medications
- Fast-tracking
- Adherence clubs

Client: I have to walk a really long way to get to the clinic and still have to go every month to collect my ART – but I feel well and have other places to be.

National ART manager: We need to reach 90-90-90 and implement “treat all”. How are we going to get there with the resources we have? (IAS 2016)
Differentiated care

- Client-centered approach that simplifies and adapts care services to reflect the preferences and expectations of various patient groups while reducing unnecessary burdens on the health system

- Systematic review (Davis et al, AIDS Care 2018)
  - 13 articles
  - Higher retention, lower attrition, and less loss to follow-up
  - Reduced patient wait time, travel costs, and time lost from work for drug pick-up

- Adherence clubs in South Africa (Tsondai et al, JIAS 2017)
  - “Stable patients on long-term ART can safely be offered care options”
Differentiated/combination interventions can be best combined through effective adherence monitoring (Haberer et al, JIAS 2017)
Step 1: Assess ART data, policies and delivery

Step 2: Define challenges

Step 3: Define for whom ART delivery will be differentiated

Step 4: Build a model of differentiated ART delivery

Step 5: Consider additional adaptations that can be made to differentiate ART delivery further

For ART refills

For clinical consultations

- WHEN
- WHERE
- WHO
- WHAT

Context

IAS 2016
Current state of affairs

• Adherence monitoring in routine care is rare
  • Notable exceptions include ART and anti-TB therapy (to some degree)
  • Efforts growing for oral cancer medications, HCV, others
  • Use of accurate, objective adherence measures is typically lacking

• Adherence interventions are applied across systems of care and are not tailored to the individual

• Great potential remains for efficiency and improved outcomes through introduction of (better) adherence monitoring
Introducing adherence monitoring into routine care

• OAsIS study (Optimizing Adherence through Implementation Science)
• Aims: To define, deploy, and optimize an implementation strategy for real-time electronic adherence monitoring plus associated interventions for routine HIV clinical care in Uganda
• Consolidated Framework for Implementation Science
• Activities to date
  • Qualitative interviews with multiple layers of stakeholders, including Ministry of Health, clinic directors, clinicians, and clients
  • Time and motion studies
• evriMED1000
  • Low cost real-time adherence monitor
  • Long battery-life
  • Streamlined user interface/process

• Intervention options:
  • 1-way SMS
  • 2-way SMS
  • Engagement of a social supporter
  • Alarms

• Use of adherence data
  • Improved counseling
  • Patient management
Preliminary findings

• Enthusiasm for the technology with suggestions for improvements
• Expectations for improved efficiency and effectiveness with adherence counseling
• Anticipated improvement in adherence through both use of the monitor and the SMS interventions
• Few concerns for privacy and confidentiality

• Time and motion studies show optimal engagement with triage nursing and counselors (not physicians)
Taking a holistic approach

The socio-ecological model

(Kaufman et al, JAIDS 2014)
Cochrane review of adherence interventions

• 182 randomized controlled trials
• Highly heterogeneous and biased
• RCTs at lowest risk for bias involved complex interventions, tailored ongoing support from allied health professionals, often involved education/counseling or daily support (e.g., family/peers)
• 5 interventions improved both adherence and clinical outcomes, albeit with moderate effect sizes
• Recommendations for research
  • Improved design of feasible long-term interventions
  • Objective adherence measures
  • Power to detect improvement in patient-important clinical outcomes

(Nieuwlaat et al, 2014)
Adherence improves...

- When patients understand what they are taking and why they are taking it
- When getting the medication is easy and affordable
- When support is available when taking medication is hard

- Our job is to design health care delivery systems accordingly
- A key missing piece is understanding when systems are failing patients... that is where monitoring is needed
Summary

• Adherence monitoring is poorly implemented for most routine clinical care
• Numerous evidence-based adherence interventions exist, but are often not implemented
• Differentiated care has been developed within HIV care delivery systems with good effect
• Potential still exists for further benefit (e.g., efficiency and improved clinical outcomes) by combining differentiated with effective adherence monitoring
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